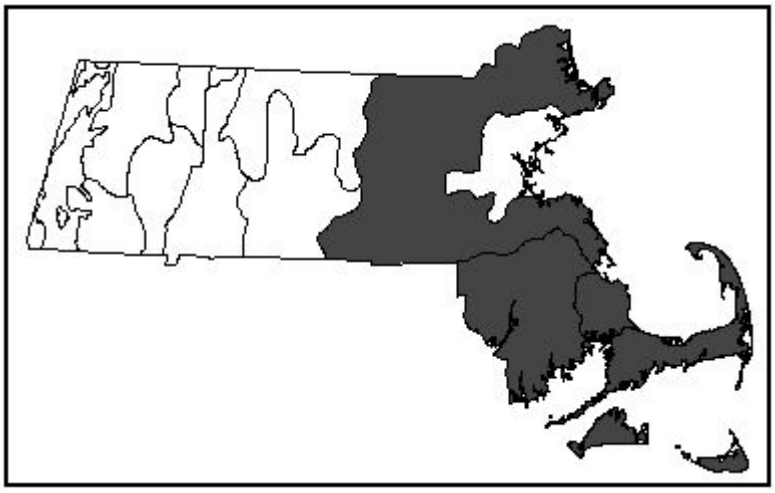
Community Name: **ATLANTIC WHITE CEDAR BOG**
Community ELCODE: CP1B1B2000
SRANK: S2



Concept: Acidic forested peatlands with a nearly continuous heath shrub layer and an open canopy in which Atlantic white cedar is the characteristic tree species.

Environmental setting: Semi-forested level bogs with sphagnum mats. More information is needed on the physical characteristics of Atlantic white cedar forested bog communities. In Massachusetts, surrounded by upland Pitch Pine - Oak Forests and Pitch Pine - Scrub Oak Communities.

Vegetation Description: Total canopy coverage is low, but Atlantic white cedar (AWC; *Chamaecyparis thyoides*) is dominant with scattered red maple (*Acer rubrum*). Other occasional associates are white pine (*Pinus strobus*), grey birch (*Betula populifolia*), pitch pine (*Pinus rigida*), and black spruce (*Picea mariana*). A low shrub layer is dominated by leatherleaf (*Chamaedaphne calyculata*) and sheep laurel (*Kalmia angustifolia*) mixed with clumps of tall shrubs including high bush blueberry (*Vaccinium corymbosum*) and swamp azalea (*Rhododendron viscosum*). Other associated shrub species are black huckleberry (*Gaylussacia baccata*), dwarf huckleberry (*G. dumosa*), rhodora (*Rhododendron canadense*), and bog rosemary (*Andromeda glaucophylla*). There is typically a well-formed Sphagnum moss layer below the shrubs, and large and small cranberry (*Vaccinium macrocarpon* and *V. oxycoccus*), sundews (*Drosera* spp.) and pitcher plants (*Sarracenia purpurea*) occur throughout.

Associations: Motzkin (1991) described six AWC associations in Massachusetts. AWC bogs are equivalent to his Cedar bog type.

Habitat values for Associated Fauna: The moats of AWC bogs can function as vernal pool habitat if water remains standing for 2-3 months and they lack fish; these areas provide important amphibian breeding habitat.

Associated rare plants:

NONE KNOWN

Associated rare animals:

AMBYSTOMA LATERALE	BLUE-SPOTTED SALAMANDER	SC
MITOURA HESSELI	HESSEL'S HAIRSTREAK	SC
PAPAIPEMA APPASSIONATA	PITCHER PLANT BORER MOTH	SC

From: Swain, P.C. & J.B. Kearsley. 2001. Classification of the Natural Communities of Massachusetts. Version 1.3. Natural Heritage & Endangered Species Program, Division of Fisheries & Wildlife. Westborough, MA.

Examples with Public Access: Mashpee pine barrens, Mashpee.

Threats: The two greatest threats to AWC swamps are land clearing for agricultural, commercial and residential development, and interference of normal hydrological functioning as a result of development. Atlantic white cedar has been cut extensively for posts and shingles for over three centuries. In an extensive statewide vegetation inventory funded by NHESP in 1990, no uncut stands were found, but several sites contained cedars that were 100-200 years old. Selective cutting is detrimental to the persistence of AWC swamps, because hardwoods, such as red maple, out-compete and replace AWC. Any alterations to the natural hydroperiod of AWC swamps threatens their persistence.

Management needs: Due to the limited distribution of AWC swamps, it is recommended that no clearing or filling of these wetlands be allowed. Atlantic white cedar will regenerate best following catastrophic disturbance events such as hurricanes and fires. Data suggest that in the absence of disturbance, red maple and shrubs increase in abundance at the expense of Atlantic white cedar. Fire suppression negatively threatens the long-term persistence of AWC swamps, and controlled burning practices may be an appropriate restoration tool in many areas. Controlled burning should be accompanied by small-patch clearcuts to be most effective. By clear-cutting small patches, generally 20 m x 20 m, and removing the slash and competing vegetation, pure, even-aged stands of Atlantic white cedar are able to regenerate. AWC swamps require a natural cycle of wet and dry periods for their survival and reproduction. Standing water for much of the year is unfavorable for both seed germination and seedling survival, and young seedlings are killed by both drowning and drought. It is recommended that any alterations in water levels be avoided, this includes development and road construction in uplands surrounding AWC swamps which can alter water levels. Where cedar wetlands are associated with river systems, it is important to maintain normal hydrologic regime of the river.

Inventory need rank: 3

Inventory comments: Inventory and vegetation classification completed by Glenn Motzkin in 1990.

Synonyms

USNVC/TNC: Part of Chamaecyparis thyoides/Chamaedaphne calyculata woodland [CEGL006321].

MA [old name]: Not tracked.

ME: ?

VT: Not described.

NH: ?

NY: Not described.

CT: ?

RI: Part of Coastal plain Atlantic White Cedar Swamp.

Golet & Larson, 1974:

Other: Motzkin 1991. Cedar bog type.

Author: J. Kearsley **Date:** 7/21/99